

REMARKS / ARGUMENTS

I. General Remarks and Disposition of the Claims

Please consider the application in view of the following remarks. Applicants thank the Examiner for her careful consideration of this application.

At the time of the Office Action, claims 42-61 were pending in this application. Claims 42-61 were rejected in the Office Action. Claim 59 was objected to in the Office Action. By this paper, claims 47, 49, 53, 55, 59, and 60 have been amended. These amendments are supported by the specification as filed. All the amendments are made in a good faith effort to advance the prosecution on the merits of this case. It should not be assumed that the amendments made herein were made for reasons related to patentability. Applicants respectfully request that the above amendments be entered and further request reconsideration in light of the amendments and remarks contained herein.

II. Remarks Regarding Objections to the Claims

Claim 59 stands objected to. With regards to this objection, the Office Action states:

Claim 59 is object[ed] to because of the following informalities: “ply(...)” should be changed to “poly(...)”. Appropriate correction is required.

(Office Action at 2.) In this response, Applicants have amended claim 59 as suggested by the Examiner. Therefore, Applicants respectfully request that this objection be withdrawn.

III. Remarks Regarding Double-Patenting Rejections

Claims 42-54 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 9-11, and 13-17 of co-pending U.S. Application Serial No. 11/046,043 in view of U.S. Patent No. 4,829,100. As this rejection is provisional in nature, Applicants will hold in abeyance their response until allowable subject matter is indicated. If the double-patenting rejection remains pending in the present application and is no longer provisional, Applicants will consider filing a terminal disclaimer at that time.

IV. Remarks Regarding Rejections Under 35 U.S.C. § 103(a)

A. Claims 42-54

Claims 42-54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,209,643 issued to Nguyen *et al.* (hereinafter “*Nguyen*”) in view of U.S. Patent No. 6,458,867 issued to Wang *et al.* (hereinafter “*Wang*”) in further view of U.S. Patent No. 6,817,414 issued to Lee *et al.* (hereinafter “*Lee*”). With respect to this rejection, the Office Action states:

Nguyen et al discloses a method of introducing treatment chemicals and treating a subterranean formation comprising providing a fluid suspension including a mixture of particulate material such as gravel packing material (See column 8, lines 20-21) in said fluid suspension, a solution of a tackifying compound in a solvent (See column 5, lines 10-13) such as **alcohol** (See column 4, lines 55-56) and a treatment chemical whereby the treatment chemical is contacted by said tackifying compound and at least partially coated therewith whereby the tackifying compound retards release of said treatment chemical in said fluid suspension; and depositing the coated particulates in the subterranean formation whereby coated treatment chemical is subsequently released within the subterranean formation (i.e. the tackifying compound is *degradable*) to treat at the portion of formation in contact therewith (See column 12, lines 33-55). The tackifying compound includes **any** compound (See column 5, lines 11-12), e.g. a **polyamide** (See column 5, lines 21-23) or polyesters, polyethers and polycarbonates, polycarbonates, styrene-butadiene latices, natural or synthetic resins such as shellac and the like (See column 6, lines 9-14); and the treatment chemical include biocides, corrosion inhibitors, gel breakers such as oxidizers, enzymes, etc. (See column 4, lines 40-42). The tackifying compound is admixed in an amount of 0.1-3.0 % by weight of the coated particles (See Example 1; column 9, line 65 to column 10, line 5). The Examiner takes official notice that it is a common knowledge in the art *polyester* or *polyamide* hydrolyze either through acid or base catalysis, to a carboxylic acid (i.e. claimed acid releasing degradable material), as evidenced by Wang *et al* (See column 8, line 66 to column 9, line 12).

Although Nguyen et al teaches the tackifying compound includes **any** compound that adheres to the particles and retards release of the treatment chemical, Nguyen et al fails to teach that the tackifying compound is *polylactide*.

Lee et al teaches that gravel having *coating* comprising chemicals that slowly hydrolyze and release an acidic by-product

(See column 3, lines 6-15), e.g. lactic polymer (**claimed polylactide**)* (See column 3, lines 20-28) can be used to degrade a filter cake (See column 2, lines 52-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used lactic polymer (claimed polylactide) as a tackifying compound in Nguyen et al with the expectation of providing the desired degradation a filter cake since Lee et al teach that chemicals that slowly hydrolyze and release an acidic by-product e.g. lactic polymer, are suitable to be used to degrade a filter cake, and Nguyen et al do not limit their teaching to particular tackifying compounds. Moreover, it is held that the selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

As to claimed solvent of claim 12, obviously, one of ordinary skill in the art would use a conventional alcohol such as methanol and isopropanol as a solvent in Nguyen et al because Nguyen et al does not limit their teaching to particular alcohols.

As to claims 47 and 53, plasticizers were not addressed because they are *optional*.

As to claims 48 and 54, poly(orthoester) is not addressed because it is *optional*.

(Office Action at 4-6.) Applicants respectfully disagree.

In order for a reference or combination of references to form the basis for a rejection under § 103(a), the reference or combination of references must teach or suggest all of the elements of the claim. Applicants respectfully submit that the combination of *Nguyen*, *Wang*, and *Lee* fails to teach or suggest all of the elements of claims 42-54.

First, Applicants respectfully submit that a *prima facie* case of obviousness has not been established and cannot be established with respect to *Nguyen*, *Wang*, and *Lee* because a person of ordinary skill at the art at the time of Applicants' invention would not have perceived a reason to combine the references. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007). To determine if there was an apparent reason to combine references, an explicit analysis of the interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person of ordinary skill in the art is often necessary. *Id.* Specifically, the analysis supporting a § 103(a) rejection should be made explicit, and the reason that would have prompted a person of ordinary skill in

the relevant field to combine the prior art elements in the manner claimed must be identified. *Id.*

Applicants respectfully submit that the motivation articulated in the Office Action for combining *Nguyen*, *Wang*, and *Lee* is insufficient to support a *prima facie* case of obviousness. In the Office Action the Examiner alleges:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used lactic polymer (claimed polylactide) as a tackifying compound in *Nguyen* et al with the expectation of providing the desired degradation a filter cake since *Lee* et al teach that chemical that slowly hydrolyze and release an acidic by-product e.g. lactic polymer are suitable to be used to degrade a filter cake, and *Nguyen* et al do not limit their teaching to particular tackifying compounds.

(Office Action at 5.) However, there is no teaching in *Nguyen* of the desirability of degrading a filter cake with the tackifying compounds disclosed therein. See *Nguyen*, entire disclosure. Rather, *Nguyen* teaches the use of the tackifying compounds to delay the release of a treatment chemical and to aid in the creation of proppant agglomerates. See *Nguyen*, col. 3, lines 49-57 and col. 12, lines 49-55. Thus, the expectation of providing a desired degradation of a filter cake using chemicals that slowly hydrolyze and release an acidic by-product, would not motivate a person of ordinary skill in the art to include a polylactide as the tackifying compound in the methods of *Nguyen*. Furthermore, although the Examiner alleges that *Nguyen* does not limit their teaching to particular tackifying compounds, Applicants kindly refer the Examiner to col. 5, lines 10-19 and col. 6, lines 9-14 of *Nguyen* which discuss suitable tackifying compounds. Therefore, Applicants respectfully submit that the motivation to combine these references is insufficient, and as such this combination cannot obviate Applicants' claims. Therefore, Applicants respectfully assert that claims 42-54 are not obviated by the combination of *Nguyen*, *Wang*, and *Lee*.

Second, with respect to independent claim 49, the combination of *Nguyen*, *Wang*, and *Lee* fails to teach or suggest "wherein the acid-releasing degradable material comprises at least one acid-releasing degradable material selected from the group consisting of: poly(orthoester); a poly(*e*-caprolactone); a poly(hydroxybutyrate); a substantially water insoluble anhydride; a poly(anhydride); a poly(amino acid); a mixture of one of the above-listed compounds; a copolymer of two or more of the above-listed compounds; and any combination thereof." In contrast, *Nguyen* discloses tackifying compounds that comprise polyamides, polyesters, polyethers, polycarbamates, polycarbonates, styrene-butadiene lattices, and natural or

synthetic resins. *See Nguyen*, col. 5, line 1 - col. 6, line 14. Moreover, *Wang* and *Lee* fail to obviate the deficiencies of *Nguyen*. Rather, the Examiner merely relied on *Wang* for its alleged teaching that polyesters and polyamides hydrolyze to a carboxylic acid and *Lee* for its alleged teaching of coating chemicals with polylactide. (See Office Action at 5.) Accordingly, the combination of *Nguyen*, *Wang*, and *Lee* fails to teach or suggest each and every limitation of independent claim 49. Therefore, for at least this additional reason, Applicants respectfully assert that independent claim 49, and its dependent claims, are not obviated by the combination of *Nguyen*, *Wang*, and *Lee*.

Third, with respect to dependent claims 48 and 54, the combination of *Nguyen*, *Wang*, and *Lee* fails to teach or suggest the limitation “wherein the acid-releasing degradable material comprises a poly(orthoester).” Although the Examiner alleges that these limitations are optional, Applicants respectfully disagree. Specifically, these limitations are not optional because claims 48 and 54 require the acid-releasing degradable material to comprise a poly(orthoester) and the claims from which they depend require the presence of an acid-releasing degradable material. *See* claims 42, 49, 48, and 54. Thus, Applicants respectfully submit that these limitations are not optional. Furthermore, Applicants note that *Nguyen*, *Wang*, and *Lee* each fail to disclose a poly(orthoester). Nor has the Examiner provided any motivation to modify these references to teach this limitation. Therefore, Applicants respectfully submit that the combination *Nguyen*, *Wang*, and *Lee* fails to teach or suggest each and every limitation of claims 48 and 54. Thus, for at least this additional reason, Applicants respectfully assert that claims 48 and 54 are not obviated by the combination of *Nguyen*, *Wang*, and *Lee*.

Therefore, Applicants submit that claims 42-54 are not obviated by the combination of *Nguyen*, *Wang*, and *Lee*. Accordingly, Applicants respectfully request withdrawal of this rejection with respect to claims 42-54.

B. Claims 42-61

Claims 42-61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Nguyen* in view of *Wang* in view of U.S. Patent No. 5,192,615 issued to McDougall *et al.* (hereinafter “*McDougall*”) or *Nguyen* in view of *Wang* in further view of *Lee* in further view of *McDougall*. With respect to these rejections, the Office Action states:

The cited prior art fails to teach that the fluid suspension further comprises a plasticizer (Claims 42, 49, 55) such as starch (Claims 47,53,60).

McDougall et al teaches that generally a fracturing fluid comprises a viscous or gelled polymeric solution, a propping agent, a chemical breaker and other additives *commonly* used in fracturing fluids (See column 2, line 65 to column 3, line 1), e.g. fluid loss or wall building agents such as **starch**; friction-reducing agents such as small amounts of high molecular weight linear polymers such as polyacrylamide; surfactants or **alcohol** to reduce interfacial tension and the resistance to return flow (See column 8, lines 7-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added starch to the fluid suspension of Nguyen et al with the expectation of providing the desired control of fluid loss since McDougall et al teaches that **starch** is an additive *commonly* used in fracturing fluids as a fluid loss or wall building agent.

(Office Action at 6.) Applicants respectfully disagree.

In order for a reference or combination of references to form the basis for a rejection under § 103(a), the reference or combination of references must teach or suggest all of the elements of the claim.

First, with respect to claims 42-54, as discussed above in Section IV(A), the Examiner has failed to establish a *prima facie* case of obviousness with respect to the combination of *Nguyen*, *Wang*, and *Lee* as the motivation to articulate in the Office Action to combine these references was insufficient. Furthermore, as discussed above in Section IV(A) the combination of *Nguyen*, *Wang*, and *Lee* fails to teach or suggest each and every limitation of independent claim 49 and the specific limitations of dependent claims 48 and 54. Moreover, *McDougall* fails to obviate the deficiencies. Rather, the Examiner merely relied on *McDougall* for its alleged teaching “that starch is an additive commonly used in fracturing fluids.” As *McDougall* fails to provide any motivation to combine *Lee* with *Wang* and *Nguyen* and further fails to teach or suggest the particular limitations of independent claim 49 and dependent claims 48 and 54 discussed above, Applicants respectfully submit that claims 42-54 are patentable over the combination of *Nguyen*, *Wang*, *Lee*, and *McDougall*.

Second, with respect to independent claim 55, Applicants respectfully submit that the combination of *Nguyen*, *Wang*, *Lee*, and *McDougall* or the combination of *Nguyen*, *Wang*, and *McDougall* fails to teach or suggest the step of “combining an acid-releasing degradable material with a plasticizer to create a coating solution, with the proviso that the plasticizer does not comprise a starch.” With respect to *Nguyen*, *Wang*, and *Lee*, the Office Action states “[t]he

cited prior art fails to teach that the fluid suspension further comprises a plasticizer.” (See Office Action at 6.) Rather, the Examiner relies upon *McDougall* for its alleged disclosure of starch as a fluid loss or wall building agent. (See Office Action at 6.) However, *McDougall* fails to teach a plasticizer with the proviso that the plasticizer does not comprise a starch, as required by independent claim 55. Nor has the Examiner provided any motivation to teach this limitation. Thus, Applicants respectfully submit that independent claim 55 and its dependent claims are allowable over the combination of *Nguyen*, *Wang*, *Lee*, and *McDougall* or the combination of *Nguyen*, *Wang*, and *McDougall*.

Accordingly, for at least these reasons, Applicants respectfully request withdrawal of these rejections with respect to claims 42-61.

V. No Waiver

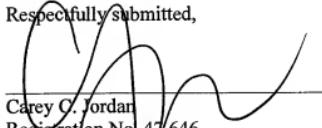
All of Applicants’ arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the cited references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner’s additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

SUMMARY

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that no fees are due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to Baker Botts, L.L.P.’s Deposit Account No. 02-0383, Order Number 063718.1357.

Respectfully submitted,


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